

AUXILIARY ENGINES. REPORT ON OIL ENGINE MACHINERY.

Rpt. 4b.

No. 11

Date of writing Report 10.11.21 When handed in at Local Office 10.11.21 Port of Winterthur Received at London Office 11.11.21

No. in Survey held at Winterthur Date, First Survey 20th July 1920 Last Survey 19
 Reg. Book. Single on the Twin } Screw vessels
 Triple }
 Master By whom built Sir W. G. Armstrong Tons 984 Gross 1921
 Built at Newcastle on Tyne Yard No. 984 When built 1921
 Engines made at Winterthur By whom made Sulzer Freres S.A. Engine Nos. 2943 When made 1921
 Donkey Boilers made at By whom made Boiler No. When made
 Brake Horse Power 200 (2 Engines) Owners Port belonging to
 Nom. Horse Power as per Rule 42 (2 Engines) Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

IL ENGINES, &c.—Type of Engines 2 Sets of Auxiliary Diesel Oil Engines or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 42 ATs. No. of cylinders 4 No. of cranks 4 Diameter of cylinders 200 mm
 Length of stroke 300 mm Revolutions per minute 300 Means of ignition Temperature due to Compression Kind of fuel used Heavy fuel oil
 Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 260 mm
 Distance between centres of main bearings 400 mm Is a flywheel fitted Yes Diameter of crank shaft journals as per Rule 121.7 mm
 as fitted 125 mm Diameter of crank pins 125 mm Breadth of crank webs as per Rule 162 mm Thickness of ditto as per Rule 68 mm
 as fitted 180 mm as fitted 69 mm Diameter of flywheel shaft as per Rule 121.7 mm Diameter of tunnel shaft as per Rule Diameter of thrust shaft as per Rule
 as fitted 125 mm as fitted as fitted as fitted as fitted Diameter of screw shaft as per Rule Is the screw shaft fitted with a continuous liner the whole length of the stern tube Yes
 as fitted as fitted Is the after end of the liner made watertight in the propeller boss Yes If the liner is in more than one length are the joints burned Yes
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes
 If two liners are fitted, is the shaft lapped or protected between the liners Yes If without liners, is the shaft arranged to run in oil Yes
 Type of outer gland fitted to stern tube Yes Length of stern bush Yes Diameter of propeller Yes
 Pitch of propeller Yes No. of blades Yes state whether moveable Yes Total surface Yes square feet
 Method of reversing hot reversible a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Thickness of cylinder liners 22 mm
 Are the cylinders fitted with safety valves Yes Means of lubrication Forced lubrication Are the exhaust pipes and silencers water cooled or lagged with
 non-conducting material Yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Yes
 No. of cooling water pumps Each Eng. Single Acting Is the sea suction provided with an efficient strainer which can be cleared
 within the vessel Yes No. of bilge pumps fitted to the Auxiliary main engines 1 Each Eng. Single Acting Diameter of ditto 80 mm Stroke 70 mm
 Can one be overhauled while the other is at work Yes No. of auxiliary pumps connected to the main bilge lines How driven
 Sizes of pumps No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room
 and in holds, etc. No. of ballast pumps How driven Sizes of pumps
 Is the ballast pump fitted with a direct suction from the engine room bilges Yes State size Is a separate auxiliary pump suction fitted in
 engine room and size Are all the bilge suction pipes fitted with roses Are the roses in Engine Room always accessible
 Are the sluices on Engine Room bulkheads always accessible Yes Are all connections with the sea direct on the skin of the ship Yes
 Are they valves or cocks Yes Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates Yes
 Are the discharge pipes above or below the deep water line Yes Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes
 Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times Yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any
 communication between the sea and the bilges Yes Is the screw shaft tunnel watertight Yes Is it fitted with a watertight door Yes
 worked from Yes If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes
 No. of main air compressors 1 Each Eng. No. of stages 3 Diameters 225/200/50 Stroke 160 Driven by Crank shaft
 No. of auxiliary air compressors No. of stages Diameters Stroke Driven by
 No. of small auxiliary air compressors No. of stages Diameters Stroke Driven by
 No. of scavenging air pumps 1 Each Eng. Diameter 392 mm Stroke 300 mm Driven by Crank shaft
 Diameter of auxiliary Diesel Engine crank shafts as per Rule as fitted Are the air compressors and their coolers made so as to be easy of access Yes

R RECEIVERS:—INJECTION No. of high pressure air receivers 1 Each Eng. Internal diameter 190 mm Cubic capacity of each 20 Litres
 Material Open hearth S.M. Steel Seamless, lap welded or riveted longitudinal joint Seamless Range of tensile strength 28 To 32 Tons per sq
 thickness 10 mm working pressure by Rules 96 ATs. No. of starting air receivers Internal diameter
 total cubic capacity Material Seamless, lap welded or riveted longitudinal joint
 Range of tensile strength thickness Working pressure by rules Is each receiver, which can be isolated,
 fitted with a safety valve as per Rule Yes Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their
 inner surfaces Opening of 120 mm dia. at one end. Is there a drain arrangement fitted at the lowest part of each receiver Yes

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	16-8-20 4-5-21	42 ATS.	75 ATS.	R	Test Satisfactory
" " COVERS	-do- -do-	42 "	75 "	R	-do-
" " JACKETS	21-7-20 2-5-21	1 "	3 "	R	-do-
" PISTON WATER PASSAGES					hot Cooled.
MAIN COMPRESSORS—1st STAGE	19-8-20 4-5-21	3 ATS	35 ATS	R	Test Satisfactory
" 2nd "	-do- -do-	17.5 "	35 "	R	-do-
" 3rd "	-do- -do-	70 "	140 "	R	-do-
AIR RECEIVERS—STARTING					
" INJECTION	13-4-21	70 ATS.	140 ATS.	R	Test satisfactory
AIR PIPES	16-8-20 4-5-21	70 "	140 "	R	-do-
FUEL PIPES	-do- -do-	70 "	140 "	R	-do-
FUEL PUMPS	-do- -do-	70 "	140 "	R	-do-
" VALVES	17-8-20 8-10-20	70 "	140 "	R	-do-
SILENCER					
" WATER JACKET	13-8-20 2-5-21	1 "	3 "	R	-do-
SEPARATE FUEL TANKS					

PLANS. Are approved plans forwarded herewith for shafting 19/11/19. Receivers 7/6/20 Separate Tanks

SPARE GEAR 1. Main Bearing (2 halves). 1. Connecting rod bottom end bearing with bolts nuts
 1. Gudgeon pin bearing. 1 Fuel Valve. 4. Pulverisers. 4 Fuel needles. 16 main piston rings. Compressor
 piston rings 1st stage 8, 2nd stage 10, 3rd stage 12. 16 air valve rings for 1st & 2nd stage Compressor.
 1 Suction & 1 Delivery Valve for 3rd stage Compressor. 2 Sets of Springs. 2 Main bearing studs
 1 Changer, 1 Suction & 1 Delivery valve for Fuel Pump.

The foregoing is a correct description.

Sulzer Frères
 Société Anonyme

Martin *W. H. Johnson*

Manufacturer.

Dates of Survey while building { During progress of work in shops-- 20/7/20, 21/7/20, 13/8/20, 16/8/20, 17/8/20, 18/8/20, 19/8/20, 20/8/20, 25/8/20, 8/10/20, 1/4/21, 13/4/21, 25/4/21, 30/4/21, 2/5/21, 4/5/21, 20/5/21.
 During erection on board vessel--
 Total No. of visits

Dates of Examination of principal parts—Cylinders 2/5/21 4/5/21 Covers 2/5/21 4/5/21 Pistons 2/5/21 4/5/21 Rods 2/5/21 4/5/21 Connecting rods 2/5/21 4/5/21
 THRUST. Crank shafts 2/5/21 4/5/21 Thrust shaft FLYWHEEL Thrust shafts 2/5/21 4/5/21 Screw shaft Propeller Stern tube Engine seatings
 Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions
 Completion of fitting sea connections Stern tube Screw shaft and propeller
 Material of crank shafts S.M. INGOT STEEL Identification Mark on Do. 3458 R 18/8/20 25/8/20 Material of thrust shaft Identification Mark on Do.
 Material of flywheel shafts S.M. INGOT STEEL Identification Marks on Do. R 2-5-21 4-5-21 Material of screw shafts Identification Marks on Do.

Is the flash point of the oil to be used over 150° F. *Yes*

Is this machinery duplicate of a previous case *No* If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. *Auxiliary Engines Constructed under ordinary Survey. Materials and workmanship good. Full power trials in shops satisfactory.*

Certificate (if required) to be sent to

The amount of Entry Fee ... £ 2-0-0 : When applied for,
 Special ... £ 30-0-0 : 25th April 1921
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When received, 2nd May 1921

W. G. Vallis
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
 Assigned *2nd 9 21*
oil engines

